

Dominion Nuclear Connecticut, Inc.  
Millstone Power Station  
Rope Ferry Road  
Waterford, CT 06385

AUG 19 2009



**Dominion**<sup>SM</sup>

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
One White Flint North  
11555 Rockville Pike  
Rockville, Maryland 20852-2738

Serial No. 09-467  
MPS Lic/MAE R0  
Docket No. 50-336  
License No. DPR-65

**DOMINION NUCLEAR CONNECTICUT, INC.**  
**MILLSTONE POWER STATION UNIT 2**  
**LICENSEE EVENT REPORT 2009-001-00,**  
**REACTOR TRIP DUE TO HIGH PRESSURIZER PRESSURE**

This letter forwards Licensee Event Report (LER) 2009-001-00 documenting an event which occurred at Millstone Power Station Unit 2 on July 3, 2009. This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in manual or automatic actuation of systems listed in 10 CFR 50.73(a)(2)(iv)(B).

If you have any questions or require additional information, please contact Mr. William D. Bartron at (860) 444-4301

Sincerely,

A. J. Jordan  
Site Vice President – Millstone

JE22  
NRR

Attachment (1):

Licensee event report 2009-001-00, Reactor Trip Due To High Pressurizer Pressure

Commitments made in this letter:

1. None

cc: U.S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406-1415

Ms. C. J. Sanders  
Project Manager  
U.S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Mail Stop 08B3  
Rockville, MD 20852-2738

NRC Senior Resident Inspector  
Millstone Power Station

**Attachment 1**

**LICENSEE EVENT REPORT 2009-001-00,**  
**REACTOR TRIP DUE TO HIGH PRESSURIZER PRESSURE**

**Millstone Power Station Unit 2**  
**Dominion Nuclear Connecticut, Inc. (DNC)**

<b>NRC FORM 366</b> <b>U.S. NUCLEAR REGULATORY COMMISSION</b> (9-2007)		<b>APPROVED BY OMB NO. 3150-0104</b> <b>EXPIRES 08/31/2010</b> <small>Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to <a href="mailto:infocollects@nrc.gov">infocollects@nrc.gov</a>, and to the Desk Officer, Office of Information and Regulatory Affairs, NE08-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.</small>																																						
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<b>12. LICENSEE CONTACT FOR THIS LER</b>																																								
<b>FACILITY NAME</b> William D. Barton, Supervisor Nuclear Station Licensing		<b>TELEPHONE NUMBER (Include Area Code)</b> 860-440-4301																																						
<b>13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT</b>																																								
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX																															
<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE). <input checked="" type="checkbox"/> NO					<b>15. EXPECTED SUBMISSION DATE</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 25%;">MONTH</th> <th style="width: 25%;">DAY</th> <th style="width: 25%;">YEAR</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>					MONTH	DAY	YEAR																												
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<b>16. ABSTRACT</b> (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) <p>At 1304 on July 3, 2009, with the Millstone Power Station Unit 2 at 100% power in Mode 1, the reactor automatically tripped due to a high pressurizer pressure reactor trip signal. There was a grid disturbance coincident with the time of the trip. Approximately 5 seconds prior to the trip, the four main turbine stop valves and four intermediate stop valves went fully closed. With the main turbine stop valves closed, the reactor coolant system (RCS) pressure increased to the high trip setpoint. The reactor automatically tripped and both pressurizer power operated relief valves (PORVs) lifted to relieve pressure as designed. The reactor trip generated a turbine trip signal.</p> <p>The most probable cause of this event is that the 24VDC power supply to the electro-hydraulic control (EHC) of the turbine valves did not tolerate the July 3, 2009 grid disturbance. As a result of the grid disturbance, the master trip solenoid valves (MTSVs) provided fluctuating emergency trip system (ETS) hydraulic pressure to the turbine valves. This fluctuating hydraulic pressure caused the turbine stop and intermediate stop valves to close unexpectedly.</p> <p>This event is being reported pursuant to 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in manual or automatic actuation of systems listed in 10 CFR 50.73(a)(2)(iv)(B).</p>																																								

## LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Millstone Power Station - Unit 2	05000336	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		2009	-- 001 --	00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

1. Event Description

At 1304 on July 3, 2009, with the Millstone Power Station Unit 2 at 100% power in Mode 1, the reactor automatically tripped due to a high pressurizer pressure reactor trip signal. There was a grid disturbance coincident with the time of the trip. Approximately 5 seconds prior to the trip, the four main turbine stop valves and four intermediate stop valves went fully closed. With the main turbine stop valves closed, the reactor coolant system (RCS) pressure increased to the high trip setpoint. The reactor automatically tripped and both pressurizer power operated relief valves (PORVs) [PCV] lifted to relieve pressure as designed. The reactor trip generated a turbine trip signal.

This event is being reported pursuant to 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in manual or automatic actuation of systems listed in 10 CFR 50.73(a)(2)(iv)(B).

2. Cause

The most probable cause of this event is that the 24VDC power supply to the electro-hydraulic control (EHC) of the turbine valves did not tolerate the July 3, 2009 grid disturbance. As a result of the grid disturbance, the master trip solenoid valves (MTSVs) provided fluctuating emergency trip system (ETS) hydraulic pressure to the turbine valves. This fluctuating hydraulic pressure caused the turbine stop and intermediate stop valves to close unexpectedly.

3. Assessment of Safety Consequences

This event is considered to be of low safety significance. The loss of external load was initiated by the closure of the turbine stop valves. By design, the closure of the stop valves does not result in an immediate turbine trip which would cause a reactor trip (the reactor trip on turbine trip is not credited in the Final Safety Analysis Report (FSAR) Chapter 14 Safety Analysis). With the turbine stop valve closure, the plant experienced a decrease in heat removal from the secondary system. As a result, pressurizer pressure increased, and approximately 5 seconds later, the reactor tripped on high pressurizer pressure and the pressurizer PORVs opened as designed on the high pressurizer pressure trip signal. Following the high pressurizer pressure reactor trip, a turbine trip signal was generated, which closed the turbine control valves. Operation of the PORVs prevented a challenge to the pressurizer safety valves. The RCS pressure remained below the maximum value of 2717 psia at the bottom of the reactor vessel predicted for the FSAR Section 14.2.1 Loss of External Load Event. Since the opening of the condenser dump valves was delayed due to the delayed turbine trip signal, the main steam safety valves were challenged. However, the Main Steam System pressure remained below the maximum value of 1086 psia predicted for the FSAR Section 14.2.1 Loss of External Load Event. Therefore, plant operation remained within the bounds of the FSAR Chapter 14 Safety Analysis. Based on the above, there was no adverse effect on the health and safety of the public.

4. Corrective Action

Since the most probable cause of this event was that the 24VDC power supply to the EHC of the turbine valves did not tolerate the July 3, 2009 grid disturbance, a temporary modification was implemented prior to plant startup which augments the existing VR-11 power supply for the EHC Cabinet with an Uninterruptable Power Supply (UPS) [UJX]. The UPS is designed to maintain voltage during any short duration loss of VR-11.

Other long term corrective actions are being addressed in accordance with the Millstone Corrective Action Program.

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		2009	-- 001 --	00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

5. Previous Occurrences

LER 2008-003-00, Failed Pilot Wire Causes Reactor Trip:

On May 22, 2008 at 1359 with the Millstone Power Station Unit 2 at 100% power in Mode 1, the reactor automatically shutdown following a loss of load and subsequent turbine trip. Investigation determined that a lightning strike on a transmission line created an over current condition to which the unit responded. The direct cause of the switchyard breakers opening and remaining open was a mechanical failure of a connecting wire lug in the pilot wire circuitry causing an open circuit.

LER 2008-005-00, Feedwater Heater Level Oscillation and Manual Reactor Trip:

On June 28, 2008, at 1146 with the Millstone Power Station Unit 2 in Mode 1 at 100% power, operators manually tripped the reactor when both main feedwater pumps tripped. Main turbine combined intercept valve (CIV) testing was in progress. The testing of the #3 CIV had just been completed when the 2A feedwater heater level began oscillating. The perturbations in the feedwater heater levels caused a feedwater pump suction pressure to decrease to the pump trip setpoint tripping both pumps. The operators manually tripped the reactor prior to reaching the steam generator low level automatic trip setpoint. Ineffective configuration control of parts allowed parts to be installed in a feedwater level control valve causing it to operate incorrectly which caused divergent feedwater heater level oscillations and the main feedwater pumps to trip.

The May 22, 2008 event and the July 3, 2009 event were initiated by grid disturbances. However, the most probable causes for the reactor trips were different. There are no prior corrective actions from the May 22, 2008 event that could have prevented occurrence of the July 3, 2009 event.

The June 28, 2008 event showed anomalies related to the VR-11 power supply. Power to VR-11 was lost momentarily (approximately 3 seconds) subsequent to the reactor trip during fast transfer from the normal station service transformer (NSST) [XFMR], to the reserve station service transformer (RSST). Corrective actions are in place to implement a design change to install a UPS to VR-11. The implementation of this design change may have prevented occurrence of the July 3, 2009 event. Design and implementation efforts were originally targeted for a 2011 implementation date. The targeted implementation date has been changed to June 30, 2010 and efforts continue to improve on that target date.

Energy Industry Identification System (EIIIS) codes are identified in the text as [XX].